

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A manufacturing method of an optical fiber having one or more holes extending along the fiber, comprising:

a first step comprising forming one or more holes in a preform,
a second step comprising heating the preform and drying the inside of the one or more holes to decrease a quantity of OH groups on inner wall surfaces of the preform; and
a third step comprising drawing the preform into an optical fiber,
wherein said second step and said third step are performed on a drawing tower and said third step comprises controlling a pressure of a gas in said one or more holes using a pressure-controlling device.

2. (Currently Amended) A manufacturing method of an optical fiber having one or more holes extending along the fiber, comprising:

a first step comprising forming one or more holes in a preform,
a second step comprising heating the preform and drying the inside of the one or more holes; and
a third step comprising drawing the preform into an optical fiber,
wherein said third step comprises controlling a pressure of a gas in said one or more holes using a pressure-controlling device;
at least a part of the one or more holes are through-holes;
the second step is performed on a drawing tower while a dry gas is flowed through the through-holes; and

the third step is performed on said drawing tower.

3. (Currently Amended) A manufacturing method of an optical fiber having one or more holes extending along the fiber, comprising:

a first step comprising forming one or more holes in a preform,

a second step comprising heating the preform and drying the inside of the one or more holes; and

a third step comprising drawing the preform into an optical fiber,

wherein said third step comprises controlling a pressure of a gas in said one or more holes using a pressure-controlling device;

at least a part of the one or more holes are holes having a closed end;

the second step is performed on a drawing tower while the holes having a closed end are filled with a dry gas; and

the third step is performed on said drawing tower.

4. (Currently Amended) A manufacturing method of an optical fiber ~~according to claim 3,~~
~~wherein:~~ having one or more holes extending along the fiber comprising:

a first step comprising forming one or more holes in a preform,

a second step comprising heating the preform and drying the inside of the one or more holes; and

a third step comprising drawing the preform into an optical fiber,

wherein said third step comprises controlling a pressure of a gas in said one or more holes using a pressure-controlling device;

at least a part of the one or more holes are holes having a closed end;

a step for filling a dry gas into the one or more holes having a closed end and a step for discharging the dry gas from the one or more holes having a closed end are repeated alternately in the second step; and

the third step is performed on said drawing tower.

5. (Previously Presented) A manufacturing method of an optical fiber according to claim 1, wherein:

at least a part of the one or more holes are holes having a closed end; and
the second step is performed while the inside of the one or more holes having a closed end is subjected to reduced pressure for evacuation.

6. (Previously Presented) A manufacturing method of an optical fiber according to claim 1, wherein:

the preform is heated at a temperature equal to or higher than 800°C in the second step.

7. (Original) A manufacturing method of an optical fiber according to claim 2 or 3, wherein:

the dew point of the dry gas is -50°C or lower.

8. (Previously Presented) A manufacturing method of an optical fiber according to claims 2 or 3, wherein:

the dry gas includes an inert gas equal to or more than 85% by molar fraction.

9. (Original) A manufacturing method of an optical fiber according to claim 8, wherein:
the inert gas is selected from a group consisting of N₂, He and Ar.

10. (Previously Presented) A manufacturing method of an optical fiber according to claims 2
or 3, wherein:

the dry gas includes an active gas which has dehydration effect.

11. (Original) A manufacturing method of an optical fiber according to claim 10, wherein:
the active gas having dehydration effect includes at least one of HF, F₂, Cl₂, and CO.

12. (Previously Presented) A manufacturing method of an optical fiber according to claim 1,
wherein:

the inner wall surfaces of the holes of the preform are smoothed prior to the second step.

13. (Previously Presented) A manufacturing method of an optical fiber according to claim 1,
wherein:

the inner wall surfaces of the holes of the preform are subjected to dry etching prior to the
second step.

14. (Currently Amended) A manufacturing method of an optical fiber having one or more
holes extending along the fiber, comprising:

a first step for forming one or more holes in a preform;

a second step for heating the preform and drying the inside of the one or more holes to decrease a quantity of OH groups on inner wall surfaces of the preform; and

a third step for drawing the preform into an optical fiber, wherein

said second step and said third step are performed on a drawing tower, said one or more holes is filled with a gas having a pressure and connected to a pressure-controlling means that affects said pressure during the third step, the pressure in the one or more holes is adjusted during the third process.

15. (Previously Presented) A manufacturing method of an optical fiber according to claim 1, wherein:

the preform having the one or more holes is formed from a columnar glass rod, by means of drilling using a perforation tool in the first step.

16. (Withdrawn) A manufacturing method of an optical fiber comprising:

a first step comprising assembling a plurality of capillary tubes into a bundle and inserting the bundle into a jacketing pipe so as to form a preform having one or more holes,

a second step comprising heating the preform and drying the inside of the one or more holes; and

a third step comprising drawing the preform into an optical fiber,

wherein said third step comprises controlling a pressure of a gas in said one or more holes using a pressure-controlling device.

Claims 17-23 (Cancelled)

24 (New) A manufacturing method of an optical fiber having one or more holes extending along the fiber, comprising:

a first step comprising forming a perform having one or more holes;

a second step comprising heating the perform and drying the inside of the one or more holes to decrease a quantity of OH groups on inner wall surface of the perform; and

a third step comprising drawing the perform into an optical fiber,

wherein said second step and third step are preformed on a drawing tower and said third step comprises controlling a pressure of a gas in said one or more holes using a pressure-controlling device.